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“जानने का अधिकार, जीने का अधिकार”

Mazdoor Kisan Shakti Sangathan

“The Right to Information, The Right to Live”

“पुराने को छोड़ नये के तरफ”

Jawaharlal Nehru

“Step Out From the Old to the New”

IS 8131 (1976): Test chart for circular tables for machine tools (table diameter up to 630 mm) [PGD 3: Machine Tools]

“ज्ञान से एक नये भारत का निर्माण”

Satyanaaranay Gangaram Pitroda

“Invent a New India Using Knowledge”



“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartṛhari—Nītiśatakam

“Knowledge is such a treasure which cannot be stolen”



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AMENDMENT NO. 2 MAY 1979

TO

IS:8131-1976 TEST CHART FOR CIRCULAR TABLES FOR
MACHINE TOOLS (TABLE DIAMETER UP TO 630 mm)

Alteration

(Page 2, Test Chart, col 6, against Sl No. 1) -
Substitute the following for the existing matter:

'Table dia:

\leq	320	0.02
>	320	0.03

(Surface to be concave
only)

(EDC 11)

Reprography Unit, ISI, New Delhi

AMENDMENT NO. 1 MAY 1978

TO

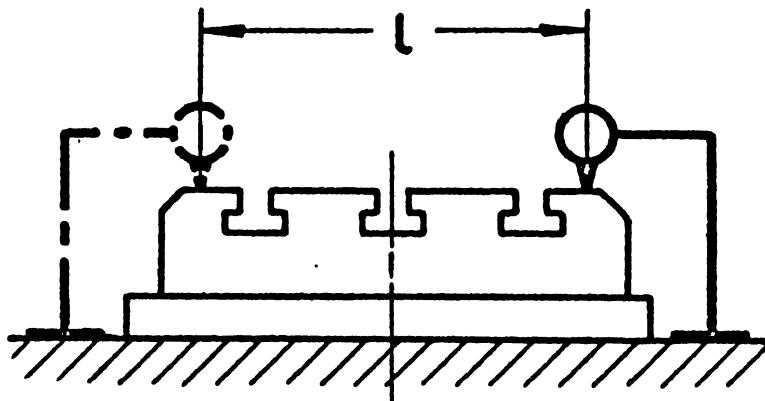
IS:8131-1976 TEST CHART FOR CIRCULAR
TABLES FOR MACHINE TOOLS
(TABLE DIAMETER UP TO 630 mm)

Corrigenda

(Page 2, Test Chart, col 5, against
Sl No. 2, last sentence) - Substitute the
following for the existing sentence:

'Test to be conducted with dial gauge
at two different positions 180° apart
and the maximum deviations noted.'

(Page 3, Test Chart, figure in col 2,
against Sl No. 4) - Substitute the following
for the existing figure:



(EDC 11)

Reprography Unit, ISI, New Delhi



Indian Standard

TEST CHART FOR CIRCULAR TABLES FOR MACHINE TOOLS (TABLE DIAMETER UP TO 630 mm)

1. Scope — Describes geometrical tests on circular tables having table diameter up to 630 mm and used as an accessory for machine tools and the corresponding permissible deviations, with reference to IS : 2063-1962 'Code for testing machine tools'.

2. Preliminary Remarks

2.1 To apply these tests, reference shall be made to IS : 2063-1962 for description of measuring methods and recommended accuracy of testing equipment.

2.2 The sequence in which the geometrical tests are given does not define the practical order of testing. In order to make checking or mounting of instruments easier, tests may be carried out in any convenient sequence.

2.3 It is not always necessary, when inspecting a circular table, to carry out all the tests described in this standard. It is up to the user to choose in agreement with the manufacturer, only those tests which are of interest to the user, but these tests are to be clearly stated while ordering a circular table.

2.4 When establishing the tolerance for a measuring range different from that indicated in this standard (see 2.3.1.1 of IS : 2063-1962) it shall be taken into consideration that the minimum tolerance is 0.01 mm. For any proportional value, the calculated value shall be rounded off to the nearest 0.005 mm. However, the least count of all measuring instruments need not be finer than 0.01 mm.

2.5 Whenever alternate methods of testing are suggested, the choice of actual method of testing is left to the manufacturer.

2.6 For the purpose of this standard, various methods of expressing permissible deviation are employed, each having a particular type of application. The methods employed are as follows:

000/000 for deviations of perpendicularity which are ratios.

000 for any length of 000 for deviations of straightness and parallelism; this expression is used in fact for local permissible deviations, the measuring length being obligatory.

000 for 000 for deviations of straightness and parallelism; this expression is used to recommend a measuring length but in this case the proportionality rule comes into operation if the measuring length differs from those indicated.

3. Testing Instruments — The testing instruments shall be of the approved type and shall be calibrated at a recognized temperature conforming to the relevant Indian Standard.

4. Accuracy Requirements — The tests to be carried out, the maximum permissible deviations, the instruments required and the manner of carrying out the tests shall be as detailed in the test chart.

TEST CHART FOR CIRCULAR TABLES FOR MACHINE TOOLS WITH TABLE DIAMETER UP TO 630 mm

TYPE.....

CUSTOMER.....

TABLE No.

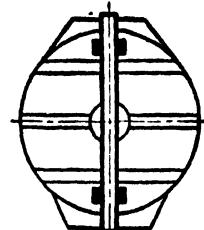
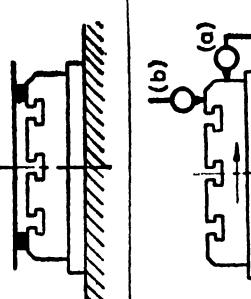
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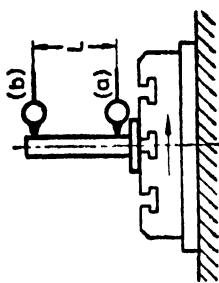
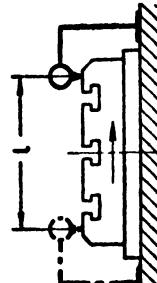
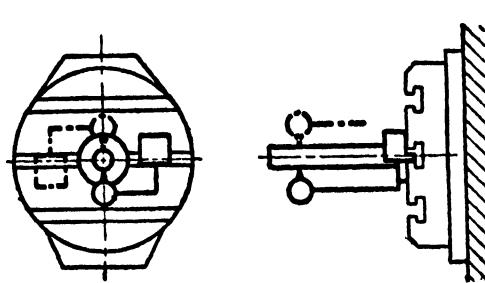
DATE.....

INSPECTOR.....

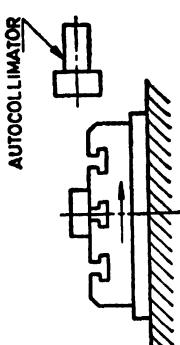
GEOMETRICAL TESTS

(All dimensions in millimetres)

Sl No.	Figure	Object	Measuring Instruments	Reference to IS : 2063-1962 and Observations	Permissible Deviations	Actual Error
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1		Flatness of working surface of table	Precision level or Straightedge and gauge blocks	5.2.2.2, 5.2.2.3 Readings noted with the precision level placed on the working surface of table in different directions or Straightedge placed on two equal gauge blocks placed on the working surface of table in different directions at extreme ends; a third combination of gauge blocks inserted at different points and the maximum difference noted	Table dia: < 315 0'02 > 315 0'03 (Surface to be concave only)	5.2.2.2
2		True running of table: a) radial b) axial	Dial gauge	5.5.3.2 Dial gauge mounted in position (a) and (b) as shown in figure with its feeler scanning the face and periphery of the table. Base of table clamped and the table rotated and readings noted. Test to be conducted with dial gauge at two different positions 18° apart and the maximum deviations noted	a) 0'05 b) Table dia: < 160 0'010 > 160 0'015 < 320 0'020	

<p>3</p> <p>True running of centre bore of table: a) near to the table b) at a distance L, where $L = 300$</p> 	<p>Test mandrel and dial gauge</p> <p>5.5.1.2 (b)</p> <p>a) 0.01 b) 0.03</p>	<p>Readings taken at 90° to the first set of readings and the maximum error between the two measurements noted</p> <p>0.01 for $L = 100$ up to a maximum of 0.04</p>
<p>4</p> <p>Parallelism of the working surface of the table to the base</p> 	<p>Dial gauge</p>	<p>Dial indicator suitably located from either side of the T-slot (as shown in figure) with its feile scanning against mandrel mounted on the centre hole. Difference in the two readings noted</p>
<p>5</p> <p>Off-set of centre T-slot with respect to centre bore</p> 	<p>Dial gauge and test mandrel</p>	<p>Dial indicator suitably located from either side of the T-slot (as shown in figure) with its feile scanning against mandrel mounted on the centre hole. Difference in the two readings noted</p>

GEOMETRICAL TESTS — *Contd*
 (All dimensions in millimetres)

Sl No.	Figure	Object	Measuring Instruments	Reference to IS : 2003-1962 and Observations	Permissible Deviations	Actual Error
(1)	(2)	(3)	(4)	(5)	(6)	(7)
6		Autocollimator Maximum permissible indexing error: a) for intermediate division b) for the total division	Autocollimator or any other suitable instrument	Table given a calculated rotation by means of worm and worm gear. Actual rotation of the table measured by theodolite and collimator. Difference in the readings noted	a) ± 45 seconds b) ± 1 minute	Note — This test is applicable only to circular tables fitted with dividing equipment.